

What is claimed is:

1. A method for the continuous measurement of the wear of a tire, comprising the steps of:
  - measuring capacitance or electrical resistance in a tread pattern element of the tire, and
  - deducing the height of the element from an equation relating the capacitance or resistance to the height.
2. A method according to Claim 1, wherein the step of measuring capacitance or resistance values is effected by an acquisition module, said acquisition module being provided within the tire.
3. A method according to Claim 2, wherein the tire is fitted on an automobile vehicle and is mounted on a wheel thereof, the step of measuring capacitance or resistance in the tread pattern element is effected by remotely energizing the acquisition module with an interrogation module mounted on one of the wheel or a fixed part of the vehicle close to the wheel, and the method further comprises the step of transmitting to the interrogation circuit the capacitance or resistance measurement acquired by the module through an inductance coupled to the acquisition module.
4. A method according to Claim 1, wherein the tire is fitted to an automobile vehicle and is mounted on a wheel thereof, the step of measuring capacitance is effected by determining an in-tune frequency of a passive resonance circuit comprising at least one capacitor formed by the tread pattern element and an inductance connected to the capacitor in the tread of the tire using an interrogation circuit mounted on the wheel or on a fixed part of the vehicle close to the wheel.
5. A tread pattern element of a tread for a tire, the element comprising a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element in a direction normal to the crown, the crown being intended, when the tire is rolling on a rolling surface, to be in contact at one time or another with the surface, wherein the element comprises at least two conducting layers disposed face to face with one another and having a same height and at least one

insulating layer consisting respectively of electrically conducting and insulating rubber compositions, the at least one insulating layer being disposed between mutually adjacent conducting layers, the at least one insulating layer having a height which is equal to one of a full height of the conducting layers to form at least one capacitor or less than the full height of the conducting layers to form at least one electrical resistance, said at least one capacitor or resistor having a capacitance or resistance value representative of the height of the element.

6. A tread pattern element according to Claim 5, wherein the at least two conducting layers are positioned with one end at a level with the crown and the at least one insulating layer is positioned with one end at one of a level with the crown to form the capacitor or a level below the crown to form the resistor.
7. A tread pattern element according to Claim 5, wherein the at least two conducting layers and the at least one insulating layer are positioned with one end at a level with the base.
8. A tread pattern element according to Claim 5, wherein the at least two conducting layers and the at least one insulating layer are rectangular and stacked against one another to form a parallelepiped shape.
9. A tread pattern element according to Claim 5, wherein the at least two conducting layers and the at least one insulating layer are cylindrically shaped and positioned coaxially one against the other to form a solid cylinder.
10. A tread pattern element of a tread for a tire, the element comprising a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element in a direction normal to the crown, the crown being intended, when the tire is rolling on a rolling surface, to be in contact with the surface, wherein the element comprises an electrically insulating rubber composition and at least two identical wires embedded in the rubber composition and positioned parallel to one another, the at least two identical wires being electrically conducting to form at least one capacitor whose dielectric and armature plates are

formed respectively by the insulating composition and by the wires, the capacitor having a capacitance value representative of the height (H) of the element.

11. A tread pattern element according to Claim 10, wherein the wires extend from a level with the base at one end to a level with the crown at an opposite end.
12. A tread for a tire, comprising at least one tread pattern element having a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element in a direction normal to the crown, the crown being intended, when the tire is rolling on a rolling surface, to be in contact at one time or another with the surface, wherein the element comprises at least two conducting layers disposed face to face with one another and having a same height and at least one insulating layer consisting respectively of electrically conducting and insulating rubber compositions, the at least one insulating layer being disposed between mutually adjacent conducting layers, the at least one insulating layer having a height which is equal to one of a full height of the conducting layers to form at least one capacitor or less than the full height of the conducting layers to form at least one electrical resistance, said at least one capacitor or resistor having a capacitance or resistance value representative of the height of the element, the tread further comprising an insulating layer arranged radially underneath the tread pattern element to cover a whole of the base of the tread pattern element to insulate the tread pattern element electrically from adjacent rubber composition in the tread.
13. A tread according to Claim 12, further comprising an electronic acquisition module connected to the at least one pattern element underneath the pattern element, said electronic acquisition module being adapted to measure one of the capacitance or resistance value and to deduce therefrom a height (H) of the at least one tread pattern element.
14. A tread according to Claim 13, wherein the acquisition module is further adapted to emit signals representative of one of the capacitance or resistance value towards a central unit mounted inside a vehicle fitted with the tire.

15. A tread according to Claim 13, wherein the acquisition module is further adapted to be remotely energized by an interrogation circuit mounted on one of the wheel or a fixed part of the vehicle close to the wheel, and to cooperate by coupling with an inductance located in the tread, so as to transmit to the interrogation circuit the capacitance measurement acquired by the module.
16. A tire comprising a tread having at least one tread pattern element having a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element in a direction normal to the crown, the crown being intended, when the tire is rolling on a rolling surface, to be in contact at one time or another with the surface, wherein the element comprises at least two conducting layers disposed face to face with one another and having a same height and at least one insulating layer consisting respectively of electrically conducting and insulating rubber compositions, the at least one insulating layer being disposed between mutually adjacent conducting layers, the at least one insulating layer having a height which is equal to one of a full height of the conducting layers to form at least one capacitor or less than the full height of the conducting layers to form at least one electrical resistance, said at least one capacitor or resistor having a capacitance or resistance value representative of the height of the element, the tread further comprising an insulating layer arranged radially underneath the tread pattern element to cover a whole of the base of the tread pattern element to insulate the tread pattern element electrically from adjacent rubber composition in the tread.
17. A tire and wheel assembly for an automobile vehicle, comprising a tire and a wheel on which the tire is fitted, the tire having a tread with a plurality of tread pattern elements each comprising a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element in a direction normal to the crown, the crown being intended, when the tire rolls over a rolling surface, to be in contact with the surface at one time or another, wherein at least one tread pattern element comprises at least two conducting layers disposed face to face with one another and having a common height and at least one insulating layer, the at least two conducting layers comprising an electrically conducting rubber composition and the at least one insulating layer comprising an electrically

insulating rubber composition, wherein two mutually adjacent conducting layers are separated by an insulating layer which extends the height of the respective conducting layers in a direction normal to that of the crown, such that the element defines a capacitor having a capacitance value representative of a height (H) of the element, the tread further comprising a resonance circuit comprising an inductance mounted underneath the tread pattern element and the capacitor to whose armature plates the inductance is connected, the resonance circuit being coupled to an interrogation circuit mounted permanently on the wheel, the interrogation circuit having a frequency scanning energy generator and detection means designed to detect the frequency at which the circuits are in tune, to deduce from that tuned frequency the capacitance value of the capacitor, and to deduce from that capacitance value the height (H) of the tread pattern element.

18. A tire and wheel assembly according to Claim 17, wherein the interrogation circuit comprises a frequency scanning energy generator, a capacitor, an inductance coupled to the inductance of the resonance circuit, and a resistance.
19. A tire and wheel assembly according to Claim 18, wherein said means for detecting the tuning frequency are mounted across the terminals of the resistance to measure the voltage between those terminals.
20. A tire and wheel assembly for an automobile vehicle comprising a tire and a wheel on which the tire is fitted, the tire having a tread which comprises tread pattern elements each with a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element, the crown being intended when the tire is rolling on a rolling surface to be in contact with the surface at one time or another, wherein at least one of the tread pattern elements comprises at least two conducting layers disposed face to face and of the same height and at least one insulating layer, the at least two conducting layers being formed of an electrically conducting rubber composition and the at least one insulating layer being formed of an electrically insulating rubber composition, wherein, mutually adjacent conducting layers are separated from one another by an interposed insulating layer which extends a full height of the conducting layers in a direction normal to that of the crown, so that the element defines a capacitor whose

capacitance value is representative of the height (H) of the element, the tread further comprising an acquisition module adapted to measure the capacitance value and which is remotely energized by an interrogation circuit mounted on one of the wheel or a fixed part of the vehicle close to the wheel, and an inductance coupled to the acquisition module to transmit to the interrogation circuit the capacitance measurement acquired by the module, the interrogation circuit comprising means for deducing from the measured capacitance value height (H) of the tread pattern element and for communicating with a central unit provided in the cockpit of the vehicle.

21. An automobile vehicle having tires whose respective treads each have tread pattern elements, each tread pattern element having a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element, the crown being intended when the tire is rolling on a rolling surface to be in contact with the surface at one time or another, wherein at least one tread pattern element in each tire comprises at least two conducting layers disposed face to face and having a same height and at least one insulating layer, the at least two conducting layers being formed of an electrically conducting rubber composition and the at least one insulating layer being formed of an electrically insulating rubber composition, wherein mutually adjacent conducting layers are separated from one another by an interposed insulating layer which extends a full height of the conducting layers in a direction normal to that of the crown, so that the element defines a capacitor whose capacitance value is representative of height (H) of the element, the tread of each tire further comprising a resonance circuit comprising an inductance mounted underneath the tread pattern element and the capacitor to whose armature plates the inductance is connected, the resonance circuit being coupled to an interrogation circuit attached permanently to a fixed part of the vehicle close to the tire, the interrogation circuit being provided with a frequency-scanning energy generator and detection means provided for detecting the frequency at which the circuits are in tune, for deducing from this tuned frequency the capacitance value of the capacitor, and for deducing from this capacitance value the height (H) of the tread pattern element, the interrogation circuit also being designed to communicate with a central unit provided in the cockpit of the vehicle.

22. An automobile vehicle according to Claim 21, wherein the interrogation circuit comprises a frequency-scanning energy generator, a capacitor, an inductance coupled to the inductance of the resonance circuit and a resistance.
23. An automobile vehicle according to Claim 22, wherein said means for detecting the tuned frequency are mounted across the terminals of the resistance to measure the voltage across the terminals.
24. An automobile vehicle fitted with tires whose respective treads each have tread pattern elements, each tread pattern element having a base and a crown connected to one another by at least one lateral face which defines a height (H) of the element, the crown being intended when the tire is rolling on a rolling surface to be in contact with the surface at one time or another, wherein at least one tread pattern element of at least one tread comprises at least two conducting layers arranged face to face and having a same height and at least one insulating layer, the at least two conducting layers being formed of an electrically conducting rubber composition and the at least one insulating layer being formed of an electrically insulating rubber composition, mutually adjacent conducting layers being separated from one another by an insulating layer which extends a full height of the conducting layers in a direction normal to that of the crown, so that the element defines a capacitor whose capacitance value is representative of a height (H) of the element, the at least one tread having an acquisition module adapted to measure the capacitance value and which is remotely energized by an interrogation circuit attached permanently to a fixed part of the vehicle close to the tire, and an inductance coupled to the acquisition module to transmit to the interrogation circuit the capacitance measurement acquired by the module, the interrogation circuit comprising means for deducing from this capacitance value the height (H) of the tread pattern element, the interrogation circuit also being designed to communicate with a central unit provided in the cockpit of the vehicle.